

PUBLICATION 1 SERVICE DESCRIPTION FOR LIVE OBJECTS SERVICE

1.1 Definitions. All capitalized terms used and not otherwise defined in this Service Description have the meanings given to them in the Agreement. In the event of any conflict between the definitions provided in this Service Description and those provided elsewhere in the Agreement, the definitions herein will prevail for purposes of this Service Description. The following terms shall have the meanings set out below:

"**API (Application Programming Interface)**" refers to a software programming interface which enables the Customer to connect Orange Live Objects Platform and services to the Customer's IT system and infrastructure.

"**Connected Objects**" means a device or object that is compatible with the Live Objects protocols (as described herein).

"**Message Bus**" means the software layer that gathers messages from different Connected Objects to be sent to the Live Objects Platform.

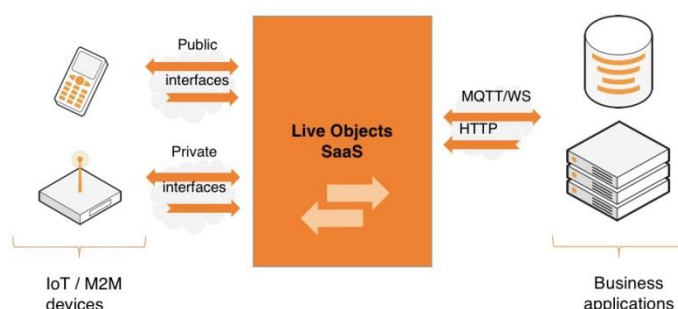
1.2 Overview. Live Objects is a scalable Software as a Service platform ("**Live Objects Platform**" or "**Service**") that allows Customers to easily connect, monitor, and manage Connected Objects to Customer's business applications through a server enabling communication between the devices and with Customer's applications. The Service is flexible and can be used for a broad range of purposes, as required for each Customer's unique needs. It is a Cloud Service, as described in the Specific Conditions for Cloud Services. The Live Objects Platform enables Customers to perform the following:

- **Message Management:**
 - Connect multiple Connected Objects to Customer's IT infrastructure; and enable message routing between Connected Objects and the Customer's business applications.
 - Optimize and simplify communications to and from Connected Objects regardless of their location.
 - Collect, deliver, filter, and route messages in near real-time.
- **Device management:**
 - Monitor and maintain an inventory of equipment and Connected Objects.
 - Configure and monitor the activities and status of Connected Objects (including implementing updates and carrying out diagnostics).
 - Remotely upgrade firmware embedded in Connected Objects.
 - Customize interface dashboards and reporting tools to suit Customer's use requirements, including:
 - being notified when Connected Objects malfunction, and
 - optimize business processes and monitor performance of Connected Objects.
- **Data management:**
 - Store and process data. Data from Connected Objects is time stamped.
 - Advanced indexed storage. APIs allowing multi-criteria search features to enable Users to search and extract a wide variety of data, as required.
- **Programming features:**
 - Enables Users to program the Connected Objects to provide automatic notifications and automated actions upon the triggering of certain pre-defined conditions, as set by the User.

1.3 Accessing the Live Objects Platform. The Live Objects Platform is accessible via the Internet (default set-up) and/or the Orange Business VPN Service ("**BVPN**") using the Live Objects Web Portal, available at: <https://liveobjects.orange-business.com/>. The administration functionalities can be accessed via a login/password provided by Orange, which the Customer and Users are required to treat as confidential.

Users can link their Connected Objects to the Live Objects Platform using APIs, which are made available on the Live Objects Platform. The APIs are accessible by Customers using API keys. Different API keys are generated for different sets of Connected Objects and only Connected Objects which have had API keys assigned to them will be able to communicate to the Live Objects Platform.

The Live Objects Platform has a number of standard protocols built-in, including MQTT(S), HTTP(S), REST, and SMS, which allow Connected Objects to communicate with the Customer's business applications, as represented in the illustration below.



In order to ensure appropriate levels of security are maintained, Orange strongly advises Customer to use encrypted protocols to communicate between the Live Objects Platform and the Connected Objects.

- 1.4 Service Categories.** Orange offers three categories of Services, depending on the functionalities Customer requires, these are "**Express**", "**Advanced**", and "**Premium**".

Prior to purchasing a specific category, Customer may request use of the free trial mode, which is called "**Discover**". "**Discover**" is available for a period of 3 months and provides the User with all the features available in the "**Premium**" Service category.

The protocols and features of each Service category are set out in the following table:

Live Objects			
Protocols & Features	Service Category		
	Express	Advanced	Premium
MQTT(S)	X	X	X
HTTP(S) / REST	X	X	X
SMS (device traffic with an Orange SIM)	X	X	X
SDK for Connected Objects	X	X	X
Management of Connected Objects	X	X	X
Unitary Firmware Updates	X	X	X
Message Management	X	X	X
Time and Date stamping / Time Series Data Storage		X	X
Group Management and Scheduling		X	X
Message Decoding			X
Data Searching			X
Data Indexing			X
Non-Complex Event Management and Notification			X
Graphical Representation of Data			X

Details of the protocols and features are provided below.

- 1.4.1 MQTT(S) & HTTP(S).** MQTT(S) and HTTP(S) are industry standard protocols which are used to communicate between the Live Objects Platform and Connected Objects. Orange recommends using the protocol encryption layer (TLS) in order to protect User credentials and ensure an optimum level of security.
- 1.4.2 SMS.** SMS is an industry standard protocol used for the purposes of sending text messages. This feature is limited to Connected Objects that are equipped with an Orange mobile SIMs.
- 1.4.3 SDK for Connected Objects.** Orange provides Customer with a Software Developer Kit (SDK) that helps Users to program their Connected Objects to enable communications to and from the Customer's business applications, as per each Customer's unique requirements.
- 1.4.4 Management of Connected Objects.** The Live Object Platform offers various functions dedicated to management of Connected Objects, including:
- Supervise devices connection and disconnection to/from the Service.
 - Manage Connected Object configuration parameters.
 - Send command to Connected Objects and monitor the status of these commands.
 - Send resources (any binary file) to Connected Object and monitor the status of the operation.
- 1.4.5 Unitary Firmware Updates.** Users can updated firmware embedded in Connected Objects via the Live Objects Platform on a "unitary" basis – i.e. the firmware on different Connected Objects may be update one at a time.
- 1.4.6 Message Management.** The Live Objects Platform uses a Message Bus that enables messages (i.e. data communication) from Connected Objects to be routed to the Customer's external business applications.
- 1.4.7 Data Storage.** Data collected from Connected Objects is stored in France on servers controlled by Orange. This data may be retrieved by Customer using the HTTP / REST API.
- 1.4.8 Time and Date Stamping / Time Series Data Storage.** When data is collected, the Live Objects system automatically attributes a date and time to when that data was received.
- 1.4.9 Group Management and Scheduling.** This advanced feature allows Customers to manage a "group" of Connected Objects in any instance (as opposed to managing each Connected Object separately), as follows:
- Schedule regular intervals (in hours or days) for updating firmware embedded in a group of Connected Objects at specific times, and
 - Send and receive specific commands to a group of Connect Objects at the same time and/or at set intervals. For example: A User can send a command to a group of Connect Objects to "sleep" for a set period each day.

- 1.4.10 **Message Decoding.** Live Objects can decode and organize raw binary data collected from Connected Objects into meaningful human-readable format.
- 1.4.11 **Data Searching.** A full-text and geographical search engine based on "**Elastic Search**" is provided in order to search and extract the stored data. This service is accessible through HTTP / REST API.
- 1.4.12 **Data Indexing.** The Live Objects Platform has built-in data indexing capabilities, which allows Users to search and extract a wide variety data using different search functions and indicators.
- 1.4.13 **Non-Complex Event Management and Notification.** Customer can pre-program certain processes or actions that need to be taken upon certain triggers generated by the Connected Objects. By way of illustration: User can set up a set of rules whereby if the Connected Object is performing below a specified target level (set by the Customer), the User is notified by email so that he/she can take such action deemed appropriate.
- 1.4.14 **Graphical Representation of Data.** The Live Objects Platform enables Users to view collected data using a variety of graphical representations, including pie charts, graphs, or maps.
- 1.5 Help and Support**
 - 1.5.1 **Support Forum.** Customer can access free technical support via two Orange help forums (both monitored by Orange development and support personnel), available at: <https://developer.orange.com/apis/datavenue/> and [http://stackoverflow.com/questions/tagged/Live Objects/](http://stackoverflow.com/questions/tagged/Live+Objects/)
 - 1.5.2 **Helpdesk Support.** Orange also provides a dedicated Customer support helpline, which Customer can email at any time. Contact details for the helpline are available on the Live Objects Web Portal: <https://liveobjects.orange-business.com/>.

END OF SERVICE DESCRIPTION FOR LIVE OBJECTS SERVICE